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# WATER POLLUTION CONTROL ADMINISTRATION. A MEMORANDUM REPORT ON A RECONNAISSANCE STUDY

E. F. Ricketts, et al

Public Administration Service
Chicago, Illinois

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# WATER POLLUTION CONTROL ADMINISTRATION A MEMORANDUM REPORT ON A RECONNAISSANCE STUDY

Public Administration Service

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April 10, 1963

Mr. Gordon E. McCallum, Chief
Division of Water Supply and Pollution Control
Public Health Service
Department of Health, Education, and Welfare
Washington 25, D. C.

Dear Mr. McCallum:

I am pleased to submit to you a report on the reconnaissance survey recently carried out by Public Administration Service on water pollution control administration.

The survey originated from the belief that this particular program area was one that would repay critical study of content and administration. The results of our limited study tend to confirm this belief.

Field work on the survey was carried out by Thomas Jacobi and Ronald Johnson of our staff, who wish to be associated with me in expressing appreciation of the interest and cooperation shown by the staff of your division, notably, Mr. Leonard B. Dworsky.

Sincerely yours,

E. F. Ricketts

E. F. Ricketts
Associate Director



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## FOREWORD

The following report is the result of a brief reconnaissance survey carried out by PAS staff members in which the following water pollution control agencies were visited:

Federal Establishments

Public Health Service, Washington, D. C.

P.H.S. Regional Office, Chicago--Region V

P.H.S. Great Lakes and Illinois River Basin Project, Chicago

Robert A. Taft Sanitary Engineering Center, Cincinnati

State Agencies

Indiana

Louisiana

Vermont

Interstate Commission

Ohio River Valley Water Sanitation Commission, Cincinnati

Conference

State and Interstate WPC Administrators

Meeting--Chicago, December 6, 1962

In addition to the visits noted above, a considerable volume of printed matter was studied before coming to the interim conclusions embodied in the following report.

## The Present Situation

The problem of water pollution in this country can be simply stated. As the population multiplies and industry expands, the supply of fresh water remains the same; we have now reached the point where demand is beginning to overtake supply. This same supply, which looked inexhaustible at the turn of the century, is being reduced by pollution just at the time when ever-increasing calls are being made upon it, to the point where a critical shortage is imminent.

In spite of the increased attention to pollution control in recent years and the large sums invested by government and industry, the situation continues to deteriorate. Although new sewage and waste treatment plants are being built at an unprecedented rate, they are not keeping pace with the growth of population and industry, and many older plants are working under continuous overload. The present approach, in short, is inadequate, either because the money and effort going into pollution control are insufficient or because they are not administered to the best purpose.

The administration of water pollution control is complicated by the number of governmental levels and other interests involved. Ultimate authority rests with the state governments, which have jurisdiction over waters within the state boundaries, and can in most cases, set their own standards and enforce action by local governments to meet them. The actual financing and building of treatment plants, however, and their day-to-day operation, are functions of local government. The federal government is involved in the problem through a number of its agencies, plays a leading role in technical research, and is increasingly concerned with enforcement.

Industry is responsible for a great deal of existing pollution, is a correspondingly large user of clean water, and is economically concerned with control operations. An equally keen interest in pollution control from a different point of view is held by fish and wild life conservationists, recreation interests, and owners of litoral property. Other functions to be considered in dealing with this problem include irrigation, navigation, and hydroelectric power.

The existing operation in water pollution control is an uneasy compromise between these and other influences and pressures. As in most compromises, there are areas of doubtful efficiency, and the purpose of this preliminary report is to indicate where some of these areas may be, and to suggest lines of study which may lead to improvement.

## State Administration

There is a wide variety of legislative and administrative approaches to water pollution control among state governments. In all except three states, more than one agency of the state government is involved, and the total may be as high as six. This division of control is not necessarily inefficient, but it does suggest an administration that has developed piecemeal rather than one designed to fit the problem, and casts some doubt on the quality of planning and programming involved.

In 44 states, 1 of the agencies concerned is the public health department. This reflects the historical development of pollution control, with emphasis on hygiene and sanitation rather than on conservation. In 23 states, the public health department is responsible for administering federal grants under P. L. 660, and may accordingly be considered the dominant pollution control agency. In the remaining 27 states, P. L. 660 grants are administered by a specially constituted pollution control or conservation agency. The emergence of such latter bodies as the leading state influence in water pollution control may indicate increasing realization that a purely sanitary approach is no longer adequate to a problem which has rapidly growing economic, social, and political aspects. Public health must always be a dominant consideration in pollution control, but it is no longer the only one. Water is not only a domestic necessity, but also an industrial and agricultural asset, a major recreational medium, a source of power, and a means of transport.

When a state budget is drawn up, water pollution control has to compete for a share of the available funds with other desirable objects of expenditure, particularly where it is a subsidiary activity of an agency

such as the public health department. This probably accounts for the shortage of funds and staff complained of by some state pollution control administrators. The most serious impact of this shortage is the necessary concentration of available resources to meet urgent current needs, at the expense of comprehensive measures and long-range planning.

In view of the growing pressure that will be exerted on state pollution control agencies as the problem becomes more urgent and federal concern over it more insistent, there is need for a strong, efficient agency in every state, with adequate resources in finance, personnel, and technical equipment. Present indications are that in some states these standards may be approached, while in others there are deficiencies in organization and resources.

An encouraging feature of state administration is the existence of interstate compacts and commissions in several areas. These seem to vary in their influence and effectiveness from advisory committees meeting periodically to highly effective agencies such as ORSANCO and INCODEL. The interstate agency is a promising approach to the problem of planning across jurisdictional boundaries.

State-Local Relations

The disposal of sewage is essentially a local function, and the role of the state agency is one of regulation, supervision, and assistance. It must be accepted that many local jurisdictions, faced with competing demands for limited resources, wish only to be left alone to continue their existing arrangements for sewage disposal. The enforcement branch of the state agency is unlikely to make many friends if it takes too uncompromising a stand. The political connotations of this cannot be ignored. Perhaps for this reason, and from a clear understanding of the difficulties facing local jurisdictions, the tendency among state agencies seems to be toward persuasion and assistance rather than coercion. In most states, adequate enforcement laws are in existence, but heads of pollution control agencies tend to concern themselves with what appears practical to them rather than with strict enforcement of legal requirements. The result of this approach is often protracted delay in dealing with sources of pollution.

The practical difficulties of dealing effectively with pollution from sewage are accentuated by the fragmentation of control. While sewage disposal is essentially a local activity, it does not demand the inefficient and costly duplication of facilities within a limited area that now exists. Progress from the individual septic tank towards the metropolitan sewer district has not moved nearly far enough. The problem is particularly acute in metropolitan suburbs, where the long-term advantages of tying into a city sewage district are too often overshadowed by the lower immediate cost and political attraction of setting up a small, inefficient local sewage system. The result of this fragmentation, as far as the state pollution control agency is concerned, is that resources must be spread over an unnecessarily large number of sewage authorities and districts, some of them too small for reasonable efficiency. Resources in personnel, advice, training, finance, inspection, and enforcement are dissipated when they could usefully be concentrated on a smaller number of districts to much greater effect.

As the pressure for higher standards of sewage treatment increases, there may emerge a tendency for the small, inefficient sewage district to be forced out of existence. It may be useful to explore ways in which state agencies could promote the formation of larger districts and encourage mutual cooperation between municipalities to this end.

State-Federal Relations

Reference has already been made to the change of emphasis in water pollution control from the purely sanitary to sanitation plus conservation. Further evidence of this tendency is the increasing concern of the federal government with pollution control, marked by the passing of P. L. 660 and P. L. 87-88. The impact of federal interest is governed by a number of factors. The problem is a national one of increasing urgency, and the national government cannot ignore it; on the other hand, jurisdiction over local authorities and industry within a state is largely an internal affair of the state. An additional complication is that a number of federal agencies are independently concerned with the problem to a greater or less extent. Finally, some notable contributions to pollution are made by federal establishments.

The existing arrangement has aspects that are obviously welcome to state authorities. The system of grants to state administrations for planning, training, and administration contributes to state funds and makes minimum demands in return. Federal construction grants for small sewage treatment plants are administered by the states and offer the state agencies useful additional leverage in dealing with local governments. The very effective research facilities of PHS are available to state authorities which would otherwise have to set up their own establishments. PHS regional offices are available to render assistance, and seem in most cases to be on cordial terms with state agencies.

The sensitive area in state-federal relations is, of course, enforcement, where two strikingly different orientations towards the function are liable to come in conflict. The view of the federal enforcement branch is that a law controlling pollution is in existence and that it should be enforced without undue delay. Proponents of this view state that the existing procedure of conference, hearing, and finally court action offers all parties every opportunity to express their views, and far from being precipitate is so leisurely as to be inadequate to the urgency of the problem.

The other approach to enforcement, held by some state administrators, is that more can be accomplished by assistance and persuasion than by coercion. Influenced, perhaps, by their greater acquaintance with the technical and financial problems involved, they maintain that the possibilities of appeal and delay open to a hostile municipality or industry are almost unlimited, and that state agencies should be left to deal with the problem in their state in the way they consider most effective.

With recent legislation giving the federal government increased rights of intervention, this conflict of views is likely to become accentuated. It would be regrettable if progress in water pollution control were to be hampered by disagreement between governmental agencies which are seeking the same end. There appear to be other possible causes of friction between federal and state authorities, including less than adequate liaison between the various federal agencies directly and indirectly interested in pollution control. In sum, it would appear that the area of state-federal relations is one that would repay thoughtful study.

## Industry

Water is an essential raw material in most industries, and with the growth and proliferation of industry generally, industrial demand for water is increasing even more rapidly than domestic demand. Most water used by industry is returned to the source stream polluted to a greater or less extent, and the pollution may not be susceptible to the normal processes of biological regeneration. In considering the control of industrial pollution, it is necessary to keep in mind two basic facts. First, for any industry, pollution control is a completely unproductive expenditure, except for minor items of by-product recovery. Second, an industry may well be the main source of employment and prosperity in a locality. It has been suggested that too enthusiastic an implementation of pollution control measures by a state agency may evoke threats from industry of moving to a more amenable locality, and may affect adversely the influx of new industry into the area. Whether or not there is any substance to these suggestions, they afford a source of pressure on state enforcement agencies which can only be alleviated by maintaining nation-wide standards of pollution control. If this can be done there will be less possibility of a state with lax standards benefiting economically thereby.

## Other Interests

1. Agriculture. Two distinct contributions to pollution are made by agriculture. In the dry western area of the nation demands for irrigation account for a major proportion of all water use. Irrigation is one of the few water uses which removes water from the cycle without returning it. Stream flow is heavily reduced by irrigation, and with it the dilution capacity and the regenerative ability of the stream. The other type of agricultural pollution is from organic wastes and inorganic pesticides and fertilizers finding their way into streams. Some of the newer pesticides are highly toxic and immune to the normal processes of biological decay. The problem of pollution can perhaps be solved by treatment or by outlawing some synthetic preparations; that of depletion

by irrigation offers no easy solution. Irrigation water is the life blood of much western agriculture, and agricultural output there will decrease to the precise extent that irrigation is restricted. On the other hand, there may exist, now or in the future, a point beyond which priority for agriculture in the use of inadequate supplies of water is no longer economically or socially justifiable.

2. Fish and Game Conservation. The conservationist's outlook on water pollution is simple and direct. He is against it. He maintains that anyone who takes clean water out of a stream should put clean water back, regardless of technical difficulty or expense. While associations and societies, such as the Izaak Walton League, serve mainly as expressions of a minority viewpoint, state fish and game agencies have a definite function in pollution control, and are empowered in some states to initiate administrative orders or legal action.

3. Recreation. With the growth in population there has come an even greater boom in water based recreation. This has a dual impact on the pollution problem. Bathing, boating, fishing, and similar activities require clean water in varying degrees, from both a sanitary and an aesthetic viewpoint. They all, however, make their own contributions to pollution of the water they use. Recreational interests, in fact, like most users of water, make a basic demand for plenty of clean water, and the freedom to pollute it. In this area, as in the pollution problem as a whole, rapidly increasing demand is coinciding with reduction in supply, as recreational areas are closed through increased pollution.

4. Other Interest. The ubiquitous part played by water in human living is indicated by the variety of interests involved in restrictions on its use. Hydroelectric power is one of our great economic assets, but damming a river may change its whole character. Acid from a disused mine may destroy all life in miles of stream. Brine from an oil field may have the same effect. Dredging for navigation may cause a serious silting problem elsewhere in the same waterway. All these interests and many others must be taken into account in planning the future of water pollution control.

## The Future of Water Pollution Control

The existing over-all administration of water pollution control does not appear to be adequate to the dimensions of the problem that is developing. Much further study would be needed to determine the exact lines of weakness, but some possible areas are indicated.

### Legal Provisions

Federal legislation, as represented by P. L. 660 and P. L. 87-88, suggests a desire by the federal government to be able to take action on pollution control within a state, if necessary, without infringing on state rights. It is too early yet to form any opinion on how well this delicate compromise will work, but as the emergency becomes more acute, it may become desirable to amend the existing law still further, in respect to both financial provisions and coercive powers, or even to introduce new legislation.

State legislation varies from state to state. If the "Suggested State Water Pollution Control Act" issued by PHS in 1950 be taken as a guide, it seems likely that most state acts confer adequate powers, on the state pollution control authority. There are probably some states, however, where the relevant legislation is fundamentally inadequate, and others where a law which is basically sound is undermined by exceptions and exemptions written into it. A comparative analysis of state laws, on paper, as amplified through regulations, and in application, might be of value.

### Administration

While a sound legal basis is necessary, the future success or failure of the water pollution control program will depend to a large extent on its administration. The present over-all administrative structure is undeniably complex. Much of the impetus toward effectively coordinated pollution control comes from the various agencies of the federal government. The actual operation is carried out almost entirely by local government

and industry. Between these two levels lies state government, through which all communication must pass, and which may have its authority and resources dispersed among a number of unrelated state agencies. It becomes increasingly apparent that efficient state administration, with clear-cut programs and objectives that can be coordinated into the national effort, is essential to the future of water pollution control. The very diversity of existing state administrations suggests that they differ in degree of effectiveness. Here again, a comparative analysis of state administrations could be expected to throw into relief those administrative strengths and weaknesses which are generally relevant, as distinct from those arising from local and regional problems.

Finance

Much money is being spent on water pollution control now, but a great deal more will have to be spent in the future if the problem is to be contained. The existing pattern of finance in this field is for PHS to pay, directly or indirectly, for much of the research now taking place, and also to subsidize state administration and local government construction to a limited extent. Other federal subsidies come from HHFA. Many state agencies appear to spend little beyond those administrative costs not covered by federal subsidy. Some, however, give limited financial assistance to municipal construction of sewage works, and at least one makes grants for their operation and maintenance. Most of the financing of sewage treatment plants and sewers, however, is raised by local government through bond issues. There are examples of state assistance in guaranteeing and even purchasing local bonds. Industry finances its own treatment plants, although in some states taxation incentives are offered.

The additional funds needed in the future must come from one or more of the foregoing sources. There are obvious advantages to local financing of local improvements, but there is the circumstance, peculiar to water pollution control, that money spent in this field is of little direct benefit to the immediate spenders. It follows that those who continue to pollute, benefit from the expenditures of others and escape any contribution themselves.

Additional finance at state level would spread the burden over a broader fiscal base, and lend added leverage to the state administration, so making the execution of coordinated state and regional plans more practicable. The provision by state governments of funds of the order needed would, however, demand a marked increase in revenues in many states, and bear heavily on areas already burdened with bond payments for the same purpose.

Increased federal assistance offers less political objection, since federal taxation is less readily associated with a particular expenditure. The existing federal construction grant program appears to have stimulated action by local governments. Expansion of the program might result in further activity, though there is a danger that unaided building would diminish correspondingly. A favorable result of putting more federal money into local construction would be the increased pressure the federal agency would be enabled to exert over intrastate pollution.

Much of the increased expenditure needed for pollution control must be made by industry. It may well be that some financial incentive such as reduced taxation or rapid amortization would stimulate industrial expenditure. Whether this is so, and if so what form the incentive should take, is a field requiring further study.

Personnel

More expenditure on water pollution control means more personnel will be required at all levels, and this in a field where there is already a shortage of skilled men. If the new posts are to be adequately filled, the profession must be attractive. Pay scales in many states and municipalities are low throughout the range. This is discouraging to potential recruits, particularly in terms of future prospects. An adequate pay scale is fundamental to any recruiting program, but it is not the only factor. An attraction to those entering any profession is the assurance of being able to move around and progress within the profession. A nationally established and accepted system of licences, diplomas, or minimum qualifications might afford this assurance in water pollution

control. A further contribution along the same lines might be an expansion of the PHS training facilities, perhaps in connection with the new regional laboratories.

Useful data on the personnel situation in water pollution control could be obtained by a representative sample survey of the qualifications, experience, and pay of those now employed in the profession at all levels, and particularly, perhaps, by an analysis, in the case of those quitting the profession, of their reasons for leaving.

Public Relations

The greatly expanded water pollution control programs of the future will have to command public support. The large sums of money involved must come, directly or indirectly, from the taxpayer, and he will need to be convinced that this additional burden is necessary. This is not easy when the object of expenditure is unattractive, the beneficiary someone other than himself, and the level of efficiency and expenditure uneven. Financial considerations apart, there will be an additional impact on the public from restrictions on use of water, impounding for flow regulation, and other modifications of the existing situation. In some cases the instinctive prejudice against reuse of effluent may create difficulty. There are, of course, a number of citizen interests, such as fishing and aquatic recreation, favoring pollution control, and if these could be coordinated and channeled they could exert a significant influence on public opinion.

The existing PHS public relations operation functions usefully under severe limitations of staff and budget. Local campaigns such as that in St. Louis, Missouri, have been effective and successful. But there may be need for a sustained publicity effort on a wider scale, coordinated between government levels, if the ordinary man is to become generally acquainted with and interested in the problems of water pollution control.

Planning

Given the men, the money, the machinery, and public support, there remains the question of how best to attack the problem. There is need for

over-all planning that will take into account immediate urgent needs, the problems of the near future, and the desirability of a comprehensive long-range program. To be effective, such planning must be designed around the fundamental fact that water pollution pays no regard to man-made boundaries, be they political, national, fiscal, or administrative. The only realistic boundaries in pollution control are the river basin and the water shed, and planning that is heedless of this cannot be fully effective. This does not mean that local or state governments cannot usefully set up their own programs, but it does mean that such programs must be coordinated into an over-all plan before they can be assured of successful implementation. It seems inevitable that the federal government must play an increasing part in planning, and existing PHS operations, such as the Great Lakes survey, show that this need has been recognized. How federal, state, and local planning can best be integrated, however, is a question that requires careful study. Existing channels of communication may be adequate, may need modifying, or it may be desirable to set up new machinery for this purpose.

Whichever method is adopted, the setting up of comprehensive planning will be a task of extraordinary complexity. Apart from the various governmental levels involved, the conflicting sanitary, economic, social, and aesthetic factors involved are impossible to reconcile completely. What is required, in fact, is a compromise answer, or rather set of answers, which will be different not only for every stream, but for many different points on each stream. Even if this can be done for a particular point on a particular stream, the answer will be valid only for the circumstances obtaining at the time, and will be subject to modification in the light of innumerable potential changes of circumstance. Finally the complete set of individual answers has to be reconciled into an over-all plan. The task is formidable.

The first requirement for planning is the collection of data. Some are easily obtained. Figures for rainfall, stream-flow, present population are readily available. The Water Quality Network provides a flow of information on the state of many major streams at selected points. Techinques

for this type of measurement are well established. Projected figures for population growth, development of industry, change in use of land, and other circumstances affecting water use are obtainable. These and other factors, including the cost of rectifying pollution, can be readily reduced to figures. But there are other considerations, particularly the social and aesthetic, which are not easily measured in exact terms. This is not to say that they are not important. It matters very much that people should be able to swim and fish within a reasonable distance of their homes. It is very desirable that a river running through a city should be pleasant to walk and live beside. Nevertheless, if these important considerations are to be adequately represented in any serious attempt at over-all planning, they must be expressed in unemotional and unsentimental figures. How this can best be done is matter for urgent research.

When adequate data are available, it should be possible in theory to determine the optimum use and minimum quality requirements for all stretches of water. In practice it may be possible, perhaps by the use of electronic data processing, to indicate an over-all pattern of water use towards which incentives can be directed. The pattern is likely to change long before it can be achieved, and planning will have to be continuous and adaptable. The urgent necessity is that there should be planning at all levels, and that it should be more comprehensive and better coordinated than is now the case.

Enforcement

However good a plan, it is of little service unless it can be put into effect. In the case of water pollution control, this means, among other things, an effective enforcement program. Up to now, enforcement has often been a last resource after all attempts at persuasion have failed. With the increasing restriction on pollution that seems inescapable in the future, this may prove too leisurely a process and it may seem desirable to reconsider the present enforcement system, under which federal and state enforcement agencies operate with a considerable degree of independence of each other.

Whatever system of enforcement is adopted in the future, there should be close liaison between state and federal agencies. If this is so it may be possible to deal with urgent cases of pollution more effectively and more expeditiously than at present. What is quite certain is that the problem is too big and too urgent to allow of any duplication of effort, or of any conflict or competition between departments whose efforts are directed towards a common end.

## Proposal for Further Study

In view of the extent and complexity of the field, any further study of water pollution control should have limited and clearly-defined objectives. It is suggested that these be two in number:

1. To explore means of raising the efficiency of state water pollution control administration to the optimum level in every state.

2. To examine the possibility of promoting more effective relations on all levels between state and federal agencies concerned with water pollution control.

There are two possible approaches to such a study--the extensive, in which limited investigations are pursued in a large number of states, and the intensive, in which a few state administrations are subjected to detailed and intensive study. As far as possible, both should be employed for optimum results.

It seems clear that a detailed study of one or two states would be of limited value, if only because it would not allow of differentiation between problems arising from local or regional factors and those common to state administrations generally. If any report or recommendations arising from a further study are to be of general application and utility, they must be based on an extensive familiarity with the problem in all areas. It is suggested, therefore, that a further survey be undertaken, and that it be divided into two sections.

## I. Intensive Study

It is proposed that in a limited number of states, perhaps one from each PHS region, an intensive study of the present situation in water pollution control be undertaken. The study should include the following aspects of the subject.

1. Review the nature and extent of water pollution problems within the state, accomplishments of the recent past in controlling these problems, and plans and programs for future activities in this field. This review would be for the purpose of presenting the context within which official efforts have been and will be conducted.

2. Analyze statutes and regulations of the state as they control or affect program content, objectives, methods, and powers of administrative agencies concerned with water pollution control. This analysis would have the twofold purpose of determining the legal framework within which the state's programs are being conducted, and of appraising the adequacy of this legal basis in relation to special problems presented within the state and to the experience and findings of other official and quasi-official bodies that have been concerned with the legal foundations of water pollution control programs.

3. Examine recent trends in and the present situation respecting federal, state, and local financial support for water pollution control within the state. Such an examination would serve the purposes of providing a measure of comparative effort by the several levels of government and of tendencies therein.

4. Examine state and local personnel policies and practices as they relate to water pollution control administration, and inventory and characterize state personnel resources for such activities. The principal administrative resources of a state government for water pollution control are represented by the number and technical qualifications of program personnel.

5. Examine (a) the structure of the state government in relation to and the internal administrative organization of agencies involved in water pollution control, (b) relationships among the interested administrative agencies and (c) executive and legislative relationships as they affect the content, resources, and administration of water pollution control programs. These inquiries would seek to determine the setting within which program policy is fixed, financial resources are allocated, and available resources are employed in prosecuting the program.

6. Review administrative practices in state water pollution control, with specific attention to (a) information needed in an available for program planning and practices in obtaining and utilizing such information, (b) procedures and practices in formulating program policies, regulations, and interpretations, (c) procedures in license and permit activities, (d) geographical and related patterns in the utilization of staff, (e) formal and informal compliance and enforcement procedures, and (f) informational activities in support of compliance efforts. These appear to be the critical areas of administrative practice, and this review would seek to assess their suitability to the characteristics of the state and to the accomplishment of program objectives.

7. Review federal, state, and local program and administrative relationships in the conduct of water pollution control programs within the state. Because these programs require action at all three levels, attention must be directed towards the effectiveness with which efforts are mashed into a unified and smoothly functioning program.

8. Analyze the relationships of state compact groups and regional bodies to action at the state level and the general effectiveness of such bodies, insofar as they may be represented within the state.

9. Review, through interviews with selected industrial establishments and industry groups, attitudes towards and responses to water pollution control programs and activities.

It is estimated that such a study, if carried out by Public Administration Service, would cost not more than $12,000 for each state studied.

II. Extensive Study

It is further proposed that in as many of the remaining states as possible, a limited investigation be carried out, covering in all cases the following areas:

a. Relation of resources to population and industry.

b. Extent of existing pollution.

c. State legislation.

d. Administration machinery and resources.

e. Finance.

f. Personnel.

g. State-federal relations, including all federal activities in the state.

h. Planning.

i. Any other aspects of pollution control of special interest in the state concerned.

It is estimated that a limited study of this kind, if carried out by Public Administration Service, would cost not more than $5,000 for each state studied.

A report would be submitted on each state studied, whether the study were intensive or limited, and a comprehensive summary report, including comparative data, findings, and recommendations, would be compiled at the conclusion of the survey.